
*Dedicated to the memory of
Jess Stein*

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Len (lep), *n.* a male given name, form of **Leonard**.
Le-na (lě'nə; Russ. lye'nə), *n.* 1. a river in the Russian Federation in Asia, flowing NE from Lake Baikal through the Yakutsk Republic into the Laptev Sea. 2800 mi. (4500 km) long. 2. a female given name, form of **Helena**.

Le-nae-a (lə nā'ə), *n.* (sometimes used with a plural *v.*) a festival in ancient Athens in honor of Dionysus, celebrated at the beginning of February and comprising a public banquet followed by the performance of comedies. Also, **Le-na-i-a** (lə nī'ə).

Le Nain (lə nān'), **Antoine** (än twān'), ("the Elder"), 1588?-1648, and his two brothers **Louis** (lwā), ("the Roman"), 1593?-1648, and **Mathieu** (mä tyō'), 1607-77, French painters.

Len-a-pe (len'ə pē, lə nā'pē), *n.*, *pl.* -pes, (esp. collectively) -pes. Delaware (def. 5, 6). Also called **Leni Lenape**. [1720-30, Amer.; < Unami Delaware *lenāpe* (equiv. to Proto-Algonquian *elen- ordinary + *āpew man)]

Le-nard (lā'nārt; Eng. lā'nārd), *n.* **Philipp** (fē'lip), 1862-1947, German physicist, born in Czechoslovakia; Nobel prize 1905.

Le-nard tube, *Electronics*. an early cathode-ray tube having at the end opposite the cathode a window of thin glass or metal allowing cathode rays (**Le-nard rays**) to pass out into the atmosphere. [named after P. LENARD]

Len-ca (leng'kə), *n.*, *pl.* -cas, (esp. collectively) -cas. 1. a member of an Indian people of El Salvador and central Honduras. 2. the language of the Lenca.

Len-clos (län klō'), *n.* **Anne** (än, än), (*Ninon de Len-clos*), 1620-1705?, French courtesan and wit.

lend (lend), *v.*, **lent**, **lend-ing**. —*v.t.* 1. to grant the use of (something) on condition that it or its equivalent will be returned. 2. to give (money) on condition that it is returned and that interest is paid for its temporary use. 3. to give or contribute obligingly or helpfully: to lend one's aid to a cause. 4. to adapt (oneself or itself) to something: The building should lend itself to inexpensive remodeling. 5. to furnish or impart: Distance lends enchantment to the view. —*v.i.* 6. to make a loan. 7. **lend a hand**, to give help; aid: If everyone lends a hand, we can have dinner ready in half an hour. [bef. 900; ME *lenden*, var. (orig. past tense) of *lenen*, OE *lēnan* (c. D *lenen*, G *lehen*, ON *lāna*), deriv. of *lēn* loan; c. G *Lehnen*, ON *lān*. See **LOAN**] —**lend'er**, *n.*

lend-a-ble (len'də bəl), *adj.* reserved or at hand for purposes of lending: lendable stock; lendable money. [1605-15; LEND + -ABLE]

lend-ing li-brary, 1. Also called **circulating library**, **rental library**, a small library that is maintained by a commercial establishment, as a drugstore, and is composed largely of current books that are lent to customers for a fee. 2. *Chiefly Brit.* a public library that lends materials or the division or section of it that carries out this function. [1700-10]

lend-lease (lend'lēz'), *n.*, *v.*, -leased, -leasing. —*n.* 1. the matériel and services supplied by the U.S. to its allies during World War II under an act of Congress (**Lend-Lease Act**) passed in 1941: such aid was to be repaid in kind after the war. 2. the two-way transfer of ideas, styles, etc. —*v.t.* 3. to supply (matériel or services) as authorized by the Lend-Lease Act. [1935-40]

Le-nex-a (lə nek'sə), *n.* a city in NE Kansas. 18,639.

L'en-fant (län fän'), *n.* **Pierre Charles** (pyer shārl), 1754-1825, U.S. engineer, architect, and soldier; born in France; designer of Washington, D.C.

Len-glen (leng'glən, -lən; Fr. län glen'), *n.* **Suzanne** (soo zan'; Fr. sy zan'), 1899-1938, French tennis player.

length (length, length, length), *n.* 1. the longest extent of anything as measured from end to end: the length of a river. 2. the measure of the greatest dimension of a plane or solid figure. 3. extent from beginning to end of a series, enumeration, account, book, etc.: a report running 300 pages in length. 4. extent in time; duration: the length of a battle. 5. a distance determined by the extent of something specified: Hold the picture at arm's length. 6. a piece or portion of a certain or a known extent: a length of rope. 7. the quality or state of being long rather than short: a journey remarkable for its length. 8. the extent to which a person might or would go in pursuing something: He went to great lengths to get what he wanted. 9. a large extent or expanse of something. 10. the measure from end to end of a horse, boat, etc., as a unit of distance in racing: The horse won by two lengths. 11. Clothing. the extent of a garment related to a point it reaches, as on the wearer's body, the floor, or on a garment used as a standard of measurement (usually used in combination): an ankle-length gown; a floor-length negligee; a three-quarter-length coat. 12. *Pros.* *Phonet.* a. (of a vowel or syllable) quantity, whether long or short. b. the quality of vowels. 13. Bridge. the possession of four or more than four cards in a given suit. 14. *Theat.* *Archaic.* 42 lines of an acting part. 15. at length, a. in or to the full extent; completely. b. after a time; finally: At length there was a step forward in the negotiations. 16. go to any length or lengths, to disregard any impediment that could prevent one from accomplishing one's purpose: He would go to any lengths to get his own way. 17. keep at arm's length. See **arm** (def. 16). [bef. 900; ME *length(e)*, OE *lengthu*; c. D *lengte*, ON *lengd*. See **LONG**, -TH] —**syn.** 1. span, stretch, reach, scope, measure.

length/ between/ perpendic/ulars, *Naut.* the length of a hull between the forward and after perpendicular. Cf. **perpendicular** (def. 11).

length-on (leng'kən, leng'-, len'-), *v.t.* 1. to make longer; make greater in length. —*v.i.* 2. to become

lengthen to lengthen beyond some original point or so as to reach a certain point: to extend a railway line by a hundred miles. To stretch is primarily to lengthen by drawing or tension: to stretch a rubber band. Both **PROLONG** and **PROTRACT** mean esp. to lengthen in time, and therefore apply to intangibles. To **PROLONG** is to continue beyond the desired, estimated, or allotted time: to prolong an interview. To **PROTRACT** is to draw out to undue length or to be slow in coming to a conclusion: to protract a discussion. —**Ant.** 1. shorten.

length/ o' ver all, *Naut.* the entire length of a vessel, measured from the foremost point of the bow to the aftermost point of the stern.

length-ways (leng'kth'wāz', length'-, len'kth'-), *adv.*, *adj.* lengthwise. [1590-1600; LENGTH + -WAYS]

length-wise (leng'kth'wīz', length'-, len'kth'-), *adv.*, *adj.* in the direction of the length. [1570-80; LENGTH + -WISE]

length-y (leng'kth', leng'-, len'-), *adj.* **length-i-er**, **length-i-est**. 1. having or being of great length; very long: a lengthy journey. 2. tediously verbose; very long; too long: a lengthy speech. [1680-90, Amer.; LENGTH + -Y] —**length-i-ly**, *adv.* —**length-i-ness**, *n.*

Len-gua (leng'gwa), *n.* 1. a member of a group of Indian peoples living in the Gran Chaco area of Paraguay. 2. any of several languages spoken by these peoples. [1820-25; < Sp; lit., tongue, ref. to their custom of wearing labrets]

len-i-en-cy (lē'nē ən sē, lēn'yən-), *n.*, *pl.* -cies. 1. the quality or state of being lenient. 2. a lenient act. Also, **len-i-ence**. [1770-80; LENI(ENT) + -ENCY]

len-i-ent (lē'nē ənt, lēn'yənt), *adj.* 1. agreeably tolerant; permissive; indulgent: He tended to be lenient toward the children. More lenient laws encouraged greater freedom of expression. 2. *Archaic.* softening, soothing, or alleviative. [1645-55; < L *lenient* (s. of *leniens*), prp. of *lenire* to soften, alleviate, soothe. See **LENIS**, -ENT] —**len-i-ent-ly**, *adv.*

Len-in (len'in; Russ. lye'nyin), *n.* **V(la-di-mir) (I-l-yich)** (vladīr mēr' il'yich; Russ. vlu dyē'myir ē lyēch'), (*Vladimír Ilyich Ulyanov*) ("N. Lenin"), 1870-1924, Russian revolutionary leader: Soviet premier 1918-24.

Le-ni-na-bad (len'i nə bād', Russ. lyi nyi nu bāt'), *n.* former name (1936-91) of **Khodzents**.

Le-ni-na-kan (len'i nə kán', Russ. lyi nyi nu kán'), *n.* former name of **Gumri**.

Len-in-grad (len'in grad', Russ. lyi nyin grāt'), *n.* former name (1924-91) of **St. Petersburg** (def. 1).

Len-in-ism (len'ə niz'm), *n.* the form of Communism as taught by Lenin, with emphasis on the dictatorship of the proletariat. [1915-20; LENIN + -ISM]

Len-in-ist (len'ə nist), *adj.* 1. of or pertaining to Lenin or to Leninism. —*n.* 2. an advocate or supporter of Lenin or Leninism. Also, **Le-nin-ite** (len'ə nit'). [1915-20; LENIN + -IST]

Le'nin Peak, a peak in the Trans Alai range, in central Asia, between Kyrgyzstan and Tajikistan. 23,382 ft. (7127 m). Formerly, **Kaufmann Peak**.

Le-ninsk-Ku-znets-ki (len'insk kōōz nets'kē; Russ. lye'nyinsk kōō znyets'kyē), *n.* a city in the Russian Federation in Asia. 132,000. Also, **Le'ninsk-Ku-znets-kiy**.

len-ils (lē'nīs, lā'-), *adj.*, *n.*, *pl.* **le-nes** (lē'nēz, lā'-). *Phonet.* —*adj.* 1. pronounced with relatively weak muscular tension and breath pressure, resulting in weak sound effect: in stressed or unstressed position, (b, d, g, j, v, th, z, and zh) are lenis in English, as compared with (p, t, k, ch, f, th, s, and sh), which are fortis. Cf. **fortis** (def. 1). —*n.* 2. a lenis consonant. [1925-30; < L: soft, mild, gentle]

len-it-ic (li nit'ik), *adj.* **lentic**. [1915-20; *lenit-* (as in **LENITION**, **LENITIVE**, etc.) + -IC]

len-i-tion (li nish'ən), *n.* 1. *Phonet.* a phonological process that weakens consonant articulation at the ends of syllables or between vowels, causing the consonant to become voiced, spirantized, or deleted. 2. *Ling.* a type of Celtic mutation that derives historically from phonological lenition. [1535-45 for obs. sense "mitigation, assuaging"; 1910-15 for current sense; < L *lenit(us)* (ptp. of *lenire* to soften; see **LENIS**, -ITE) + -ION]

len-i-tive (len'i tiv), *adj.* 1. softening, soothing, or mitigating, as medicines or applications. 2. mildly laxative. —*n.* 3. a lenitive medicine or application. 4. a mild laxative. 5. *Archaic.* anything that softens or soothes. [1535-45; < ML *lenitivus*. See **LENITION**, -IVE] —**len-i-tive-ly**, *adv.* —**len-i-tive-ness**, *n.*

len-i-ty (len'i tē), *n.*, *pl.* -ties. 1. the quality or state of being mild or gentle, as toward others. 2. a lenient act. [1540-50; < L *lenitūs*. See **LENIS**, -TY²]

Len'ni Len-ape (len'ē), Delaware (def. 5, 6). Also called **Lenape**.

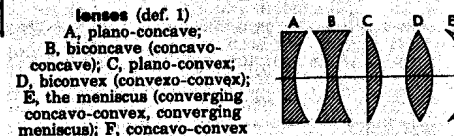
Len-nox (len'əks), *n.* a town in SW California, near Los Angeles. 18,445.

Len-ny (len'ē), *n.* a male given name, form of **Leonard**. Also, **Len'nie**.

le-no (lē'nō), *n.*, *pl.* -nos, *adj.* —*n.* 1. Also called **le'no weave**, **gauze weave**, a weave structure in which paired warp yarns are intertwined in a series of figure eights and filling yarn is passed through each of the interstices so formed, producing a firm, open mesh. 2. any fabric in this weave. —*adj.* 3. made in leno weave. [1850-55; perh. Anglicized var. of F *linon* lawn, deriv. of *lin* linen (< L *linum* flax)]

Le-noir (lə nwār' for 1; lə nōr', -nōr' for 2), *n.* 1. **Jean Joseph Étienne** (zhān zhō zēf' ā tyen'), 1822-1900, French inventor. 2. a town in W North Carolina. 13,748.

Berkshire Hills: a former estate (**Tanglewood**) area is the site of annual summer music festival
lens (lenz), *n.*, *pl.* **lenses**, *v.* —*n.* 1. a piece of parent substance, usually glass, having two opposite faces either both curved or one curved and one flat, used in an optical device in changing the convergence of light rays, as for magnification, or in correcting vision. 2. a combination of such pieces. 3. analogous device, as for affecting sound waves, magnetic radiation, or streams of electrons. See **crystalline lens**. 5. *Geol.* a body of rock or ilar in shape to a biconvex lens. —*v.t.* 6. *Moti-* tures to film (a motion picture). [1685-95; < NL use of L *lens* a lentil (from its shape); see —**lens/less**, *adj.* —**lens/like**, *adj.*



lens-board (lenz'bōrd', -bōrd'), *n.* *Photog.* the removable front panel of a view camera or enlarger which the lens is mounted. Also, **lens/ board**. [95; LENS + BOARD]

lens-man (lenz'mən), *n.*, *pl.* -men. *Informal.* *tographer*. [1950-55; LENS + -MAN]

lens/ tur/ret, *Photog.* a rotating device on a for bringing any of several lenses in front of the [1950-55]

lent (lent), *v.* pt. and pp. of **lend**.

Lent (lent), *n.* (in the Christian religion) an anniversary of fasting and penitence in preparation for beginning on Ash Wednesday and lasting 40 wee Easter, observed by Roman Catholic, Anglican, tain other churches. [bef. 1000; ME *lente(n)*, OE *lengten* spring, Lent, lit., lengthening (of daylight c. D *lente*, G *Lenz* spring; see **LENTEN**]

-lent, a suffix occurring in loanwords from Latin -ulent; pestilent.

len-ta-men-tē (len'tə men'tā; It. len'tā men't Music. slowly. [1755-65; < It, equiv. to *len LENTO* + -mente adv. suffix < L: abl. of *mēti* purpose, intention (see **MENTAL**)]

len-tan-do (len tən'dō; It. len tən'dō), *adj.* *Music.* coming slower. [1850-55; < It, prp. of *lentare* slow; see **LENTO**]

Lent-en (len'tn), *adj.* 1. of, pertaining to, or for Lent. 2. suggesting Lent, as in austerity, f or rigorousness; meager. Also, **lent'en**. [ME, tributive use of *lenten* LENT, later taken as *adj.* -EN²]

len-tic (len'tik), *adj.* pertaining to or living water. Also, **lentic**. [1930-35; < L *lent(us)* s. tionless + -IC]

len-tic-el (len'tə sel'), *n.* *Bot.* a body of cell on the periderm of a stem, appearing on the s the plant as a lens-shaped spot, and serving a [1850-55; < NL *lenticella*, dim. of L *lenticula* l LENTICLE] —**len-tic-el-late** (len'tə sel'it), *adj.*

len-tic-le (len'ti kəl), *n.* a window in a clock vealing the motion of the pendulum bob. [< L lentil, equiv. to *lenti* (s. of *lens*; see **LENS**) + -cu]

len-tic-u-lar (len tik'yə lər), *adj.* 1. of or p to a lens. 2. biconvex; convexo-convex. 3. re the seed of a lentil in form; lentil-shaped. [1 late ME < L *lenticularis* lentillike, equiv. to *le* (see **LENTICLE**) + -aris -AR'] —**len-tic-u-lar-ly**, *adv.*

lentic/ular cloud, a very smooth, round lens-shaped cloud that is often seen, singly or s groups, near a mountain ridge.

lentic/ular proc/ess, *Photog.* a method for ing images with a three-dimensional effect b graphing on lenticulated film. [1940-45]

len-tic-u-late (len tik'yə lāt'), *v.t.*, -lat-ed, *Photog.* to impress lentilles on the surface [1920-25; < L *lenticul(a)* (see **LENTICLE**) + -AT]

len-ti-cule (len'ti kyōōl'), *n.* *Photog.* one of n cylindrical or spherical lens segments embosse surface of a film used in stereoscopic and color i phy. [1880-85; < L *lenticula*; see **LENTICLE**]

len-ti-form (len'tə fōrm'), *adj.* lenticular. [1 len-tig-i-nous (len tij'ə nəs), *adj.* 1. of or p to a lentigo. 2. *Bot.* *Zool.* covered with mit freckled; speckled. Also, **len-tig-i-nose** (len ti [1590-1600; < L *lentiginōsus* freckled, equiv. to (s. of *lentigō*) **LENTIGO** + -ōsus -OUS]

len-ti-go (len ti'gō), *n.*, *pl.* -tig-i-nes (-tij'ə freckle or other pigmented spot. [1375-1425; la pl.) < L, equiv. to *lenti-* (var. of *lenti-*, s. of *lēr* + -gō *n.* suffix]

len-til (len'til, -tl), *n.* 1. a plant, *Lens culinal* legume family, having flattened, biconvex seed food. 2. the seed itself. [1200-50; ME < OF VL **lenticula* for L *lenticula*. See **LENTICLE**]

CONCISE PRONUNCIATION KEY: act, cāpe, dāre, pārt; sei, ē, ox, ōver, ōrder, oil, bōok, bōot, out, up, ūrge; child; zhai; zh as in treasure, a as in alone, e as in syst easily, o as in gallop, u as in circus; * as in fire (fī'r), l and n can serve as syllabic consonants, as in cradle (b button (būt'n). See the full key inside the front cover.

long' (lɒŋg', lɒŋg'-). *See* **tail-case clock**.

long-chain (lɒŋg'čān', lɒŋg'-), *adj.* Chem. pertaining to molecules composed of long chains of atoms, or polymers composed of long chains of monomers. [1925-30]

long' clam'. *See* **soft-shell clam**. [1835-45, Amer.]

long-cloth (lɒŋg'klɒth', lɒŋg'klɒth'), *n.* a fine, white, cotton cloth, of plain weave; high-grade muslin. [1535-45; LONG + CLOTH]

long-day (lɒŋg'dā', lɒŋg'-), *adj.* Bot. requiring a long photoperiod in order to flower. [1915-20]

Long Day's Journey Into Night', a play (1956) by Eugene O'Neill.

Long-den (lɒŋg'den, lɒŋg'-), *n.* John Eric (Johnny), born 1907, U.S. jockey and thoroughbred horse trainer.

long distance (lɒŋg'dɪstəns, lɒŋg'-), *adj.* 1. of, from, or between distant places: a long-distance phone call. 2. for, over, or covering long distances: a long-distance runner. —*adv.* 3. by long-distance telephone: to call someone long-distance. [1880-85]

long' divi'sion, *Math.* division, usually by a number of two or more digits, in which each step of the process is written down. [1820-30]

long' doz'en, a dozen plus one; thirteen; baker's dozen. [1860-65]

long-drawn-out (lɒŋg'drɒn'out', lɒŋg'-), *adj.* 1. lasting a very long time; protracted: a long-drawn-out story. 2. of great length; long: a long-drawn-out line of soldiers. Also, **drawn-out**, **long-drawn'**. [1900-05]

longe (lɒŋg', lɒŋg'-), *n., v., longed, longe-ing.* —*n.* 1. a long rope used to guide a horse during training or exercise. —*v.* 2. to train or exercise (a horse) by use of a longe. Also, **lunge**. [*<* F, OF: *n.* use of *longe* (*adj.*) *<* L *longa*, fem. of *longus* LONG]

long-eared owl (lɒŋg'ɛəd', lɒŋg'-), a mottled-gray owl, *Asio otus*, of the Northern Hemisphere, having a long tuft on each side of the head. [1805-15]

long-eron (lɒŋg'ɛrɒn, lɒŋg'-), *n.* Aeron. a main longitudinal brace or support on an airplane. [1910-15; *<* F: side-piece, equiv. to *long(er)* to run alongside, skirt (deriv. of *long* LONG) + *-eron* (*n.* suffix)]

long' ess' (es). *See* **long s**.

long-ev-ity (lɒŋg'jev'itē, lɒŋg'-), *n.* 1. a long individual life; great duration of individual life: *Our family is known for its longevity.* 2. the length or duration of life: *research in human longevity.* 3. length of service, tenure, etc.; seniority: *promotions based on longevity.* [1605-15; *<* L *longaevitās*. *See* LONGEVITY, -ITY]

long-eous (lɒŋg'jəvəs, lɒŋg'-), *adj.* Archaic. long-lived; living to a great age. [1670-80; *<* L *longaevus* aged, equiv. to *long(us)* LONG + *aeu(um)* time, age, lifetime + *-us* *adj.* suffix; *see* -OUS]

long' face', an unhappy or gloomy expression: *He's been walking around with a long face ever since he failed the examination.* [1780-90]

long-faced (lɒŋg'fæst', lɒŋg'-), *adj.* 1. having an unhappy or gloomy expression; glum. 2. having a face longer than the usual. [1585-95]

Long-fel-low (lɒŋg'fel'ə, lɒŋg'-), *n.* Henry Wadsworth (wodz'wəth), 1807-82, U.S. poet.

Long-ford (lɒŋg'fɔrd, lɒŋg'-), *n.* a county in Leinster, in the N Republic of Ireland. 31,138; 403 sq. mi. (1044 sq. km). *Co. seat:* Longford.

long' gal'lery, a large gallery, found esp. in the uppermost stories of Elizabethan and Jacobean manor houses, used as a family room and as a promenade.

long' game', 1. the aspect of golf considered in relation to the ability of a player to hit shots, esp. drives, for distance. Cf. **short game** (def. 1). 2. a card game in which all cards in the pack are dealt before play. Cf. **short game** (def. 2).

long' green', *Slang.* paper money; cash. [1890-95, Amer.]

long-hair (lɒŋg'hār', lɒŋg'-), *Informal.* —*n.* 1. Sometimes disparaging, an intellectual. 2. a person, often gifted, who is very interested in or devoted to the arts, esp. a performer, composer, or lover of classical music. 3. a person having long hair, esp. a hippie. 4. a cat having long fur. —*adj.* Also, **long-haired'**. 5. having long hair: a longhair cat. 6. of or characteristic of longhairs or their tastes. [1915-20; LONG + HAIR]

long-hand (lɒŋg'hænd', lɒŋg'-), *n.* 1. writing of the ordinary kind, in which words are written out in full (distinguished from **shorthand**). —*adj.* 2. using long-hand: *longhand writing.* 3. written in longhand: a long-hand account of the meeting. [1660-70; LONG + HAND]

long-han-dies (lɒŋg'hændz', lɒŋg'-), *n.* (used with a plural *v.*) South Midland, Southern, and Western U.S. long underwear. [LONG + HANDLES]

long' haul'. *See* **haul** (def. 21). [1925-30]

long-haul (lɒŋg'hɔl', lɒŋg'-), *adj.* 1. line-haul. 2. of or pertaining to a long haul. [1925-30]

long-head (lɒŋg'hed', lɒŋg'-), *n.* *Anthropol.* 1. a dolichocephalic person. 2. a head with a low cephalic index. [1635-45; LONG + HEAD]

long-horn (lɒŋg'hɔrn', lɒŋg'-), *n.* 1. (pl.) *See* **Texas longhorn**. 2. *Slang.* a Texan. 3. (l.c.) *See* **long-horned beetle**. 4. one of a nearly extinct English breed of beef cattle having long horns. [1825-35; LONG + HORN]

long-horned bee'tle (lɒŋg'hɔrnd', lɒŋg'-), any of numerous, often brightly colored beetles of the family Cerambycidae, usually with long antennae, the larva of which bores into the wood of living or decaying trees. Also called **longhorn**. [1830-40]

long-horned grass/hopper, any of numerous insects of the family Tettigoniidae, having long, threadlike antennae and well-developed stridulating organs on the forewings of the male. Also, **long/horn grass/hopper**. Also called **tettigonid**. Cf. **katydid**. [1890-95]

long' horse', *Gymnastics.* *See* **vaulting horse**. [1930-35]

long' house', a communal dwelling, esp. of the Iroquois and various other North American Indian peoples, consisting of a wooden, bark-covered framework often as much as 100 ft. (30.5 m) in length. [1615-25]

long' hun/dredweight, a hundredweight of 112 lb. (50.8 kg), the usual hundredweight in Great Britain, but now rare in the U.S. [1930-35]

longi-, a combining form meaning "long," used in the formation of compound words: *longicorn*. [*<* L, comb. form of *longus* LONG; *see* -I-]

long-i-cau-dal (lɒŋg'kɔd'l), *adj.* having a long tail; macrurous. Also, **long-i-kau-date** (lɒŋg'kɔ'dāt). [LONG + CAUDAL]

long-ies (lɒŋg'ez, lɒŋg'-), *n.* (used with a plural *v.*) 1. long underwear, esp. for winter use. 2. long pants for boys. [1950-55, Amer.; LONG + -IE + -S]

long-ing (lɒŋg'ɪŋg, lɒŋg'-), *n.* 1. strong, persistent desire or craving, esp. for something unattainable or distant: *filled with longing for home.* 2. an instance of this: *a sudden longing to see old friends.* —*adj.* 3. having or characterized by persistent or earnest desire: *a longing look.* [bef. 1000; ME; OE *langung*; *see* LONG + -ING] —**long-ly**, *adv.* —**long-ing-ness**, *n.* —**Syn.** 1. aspiration. *See* **desire**. 3. desirous, yearning. —**Ant.** 1. apathy.

Long-i-nus (lɒŋg'jɪnəs, lɒŋg'-), *n.* Dionysius Cassius (kash'əs), A.D. 213?-273, Greek philosopher and rhetorician. —**Long-i-ne-an** (lɒŋg'jɪn'ən, lɒŋg'-), *adj.*

long' iron, *Golf.* a club, as a driving iron, midiron, or mid-mashie, with a long shaft and an iron head the face of which has little slope, for hitting long, low shots. Cf. **short iron**. [1930-35]

long-ish (lɒŋg'ɪsh, lɒŋg'-), *adj.* somewhat long. [1605-15; LONG + -ISH]

Long' Is/land, an island in SE New York: the boroughs of Brooklyn and Queens of New York City are located at its W end. 118 mi. (190 km) long; 12-20 mi. (19-32 km) wide; 1682 sq. mi. (4356 sq. km).

Long' Is/land Sound, an arm of the Atlantic between Connecticut and Long Island. 90 mi. (145 km) long.

long-i-tude (lɒŋg'jɪ tʊd', -tʊd'), *n.* 1. Geog. angular distance east or west on the earth's surface, measured by the angle contained between the meridian of a particular place and some prime meridian, as that of Greenwich, England, and expressed either in degrees or by some corresponding difference in time. 2. Astron. a. *See* **celestial longitude**. b. *See* **galactic longitude**. [1350-1400; ME *<* L *longitūdō* length. *See* LONGI-, -TUD]

long'i-tude by account', *Navig.* the longitude of the position of a vessel as estimated by dead reckoning.

long-i-tu-di-nal (lɒŋg'jɪ tʊd'nəl, -tʊd'), *adj.* 1. of or pertaining to longitude or length: *longitudinal measurement.* 2. extending in the direction of the length of a thing; running lengthwise: *a thin, longitudinal stripe.* 3. Zool. pertaining to or extending along the long axis of the body, or the direction from front to back, or head to tail. 4. pertaining to a research design or survey in which the same subjects are observed repeatedly over a period of time. —*n.* 5. a longitudinal framing member, as in the hull of a ship. [1535-45; *<* L *longitūdīn-* (*s.* of *longitūdō*; *see* LONGITUDE) + -AL] —**long-i-tu-di-nal-ly**, *adv.*

longitu'dinal coeffi/cient, *Naval Archit.* the ratio of the immersed volume of a hull to the product obtained by multiplying its length on the water line by the immersed area of the midship transverse section, all assuming a given depth of immersion of the hull. Also called **prismatic coefficient**.

longitu'dinal fram'ing, *Naval Archit.* *See* **Ishero-wood framing**.

longitu'dinal sec'tion, the representation of an object as it would appear if cut by the vertical plane passing through the longest axis of the object.

longitu'dinal wave', *Physics.* a wave in which the direction of displacement is the same as the direction of propagation, as a sound wave. Cf. **transverse wave**. [1930-35]

long' johns', (used with a plural *v.*) *Informal.* long underwear, esp. for winter use. [1940-45]

long' jump', *Track and Field.* 1. a jump for distance from a running start. 2. a field event featuring competi-

enduring or existing for a long period of time: *lasting friendship.* 2. effective for a long time: *a long-lasting pain* 3. the effects of wear or use over a long time: *long fabric used for work clothes.* [1550-55; LONG + -ING]

long/leaf pine' (lɒŋg'lɛf', lɒŋg'-), *n.* *Pinus palustris*, valued as a pine, *Pinus palustris*, valued as a pine, and for its timber. 2. the wood of Georgia pine. [1790-1800, Amer.]

long-lin-er (lɒŋg'lɪnər, lɒŋg'-), *n.* fishing vessel that uses a long line of hooks attached to it. [1950-55; LONG + LINER]

long-lived (lɒŋg'lɪvd', -lɪvd', lɒŋg'-), *adj.* 1. long life, existence, or duration: *a long-lived fame.* 2. (of an object) lasting time: *a long-lived battery.* [1375-1400; LONG + LIVED] —**long-lived-ness**, *n.*

Long' March', the 6000-mi. (9661 km) march of Chinese Communist party and Red Army from Eastern China (Jiangxi province) to an in Shaanxi province) in 1934-35. Zedong became leader of the Communist Party of China *chángzhōng*]

Long-mead-ow (lɒŋg'med'ə, -mēd'ə), *n.* a town in S Massachusetts. 16,301.

long' meas-ure, 1. Also called **four-line stanza** in iambic tetrameter, with the second and fourth lines sometimes the first and third lines. *See* **linear measure**. [1710-20]

Long-mont (lɒŋg'mont, lɒŋg'-), *n.* a town in Colorado. 42,942.

long' moss'. *See* **Spanish moss**.

long-neck (lɒŋg'nek', lɒŋg'-), *n.* a title of beer. [1885-90, for an ear NECK]

long-neck clam' (lɒŋg'nek', lɒŋg'-), *n.* a clam. [1900-05, Amer.]

Long-go-bard (lɒŋg'gɔbəd', -gɔbəd'), *n.* a bard. [1550-55; LONG + GO + BARD]

long' one', 1. *Informal.* *See* **ta** bottle of beer.

Long' Par/liament, *Eng. Hist.* assembled November 3, 1640, was dissolved in 1653, reconvened in 1659, and was dissolved in 1689.

long' pig', (among the Maori) a human flesh as food for cannibals.

long' play', a long-playing record. [1950-55]

long-playing (lɒŋg'plɛɪŋg, lɒŋg'-), *adj.* pertaining to microgroove records that turn at 33 1/3 revolutions per minute. [1945]

long' prim'er, *Print.* a 12-point type. [1550-55; LONG + PRIME]

long-range (lɒŋg'ræŋg', lɒŋg'-), *adj.* 1. extending into the future: *a long-range plan.* 2. designed to cover a distance: *long-range rockets.* [1865]

long' ri'fle. *See* **Kentucky rifle**.

long-run (lɒŋg'rʌn', lɒŋg'-), *adj.* 1. sent over a long period of time or of performance: *a long-run hit* 2. *See* **long-run hit**

long s (es), a style of the letter s case f in form, formerly common in type character. Also, **long ess**.

long-ship (lɒŋg'shɪp', lɒŋg'-), *n.* a northern European esp. by the narrow, open hull, a single square sail, a single oar, which provided most of the power. [1560-70; LONG + SHIP]

long-shore (lɒŋg'shɔr', -shɔr', lɒŋg'-), *n.* found, or employed along the shore: *longshore jobs; longshore work.* Also, **longshore** (lɒŋg'shɔr', -shɔr', lɒŋg'-), *n.* a person employed on a ship in loading and unloading vessels. —**Usage.** *See* **man**.

long-shore-wom-an (lɒŋg'shɔr'wʊmən, lɒŋg'-), *n., pl. -wom-en.* a woman who works at a port, as in loading a ship. [LONGSHORE(MAN) + -WOMAN] —**Usage.** *See* **woman**.

long-shor-ing (lɒŋg'shɔr'ɪŋg, lɒŋg'-), *n.* work or occupation of a longshoreman. —**Usage.** *See* **longshore**.

long' shot', 1. a horse, team, or person who takes a long shot, or undertaking that offers much chance of success. 2. *Motor.* a camera shot taken at a relative distance, the subject and permitting a broad view. (def. 2), **medium shot.** 4. any means; by a measurable distance: *a long shot.* [1785-95]

CONCISE PRONUNCIATION KEY: act, cape, da ox, over, order, oil, book, boot, out, up, ur; that, zh as in treasure, a = a as in alone easily, o as in gallop, u as in circus; * as in but can serve as syllabic consonants, button (but'n). *See* the full key inside the

On the cover: Photomicrograph of crystals of vitamin B₁.
(Dennis Kunkel, University of Hawaii)

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Distacodidae [PALEON] A family of conodonts in the sub-
order Conodontiformes characterized as simple curved cones
with deeply excavated attachment scars. { dis'tô'käd-ô,dē }

distal [BIOL] Located away from the point of origin or attach-
ment. { 'dis'tâl }

distal convoluted tubule [ANAT] The portion of the nephron
in the vertebrate kidney lying between the loop of Henle and
the collecting tubules. { 'dis'tâl,kän-vô'lüt-əd'tü-byûl }

distance [MATH] 1. A nonnegative number associated with
pairs of geometric objects. 2. The spatial separation of two
points, measured by the length of a hypothetical line joining
them. 3. For two parallel lines, two skew lines, or two parallel
planes, the length of a line joining the two objects and perpen-
dicular to both. 4. For a point and a line or plane, the length of
the perpendicular from the point to the line or plane. [MECH]
The spatial separation of two points, measured by the length of
a hypothetical line joining them. { 'dis'tâns }

distance-finding station [NAV] A radio beacon equipped
with a synchronized sound signal to provide the pilot or marine
with a means of determining distance from the source of the
sound, by measuring the difference in the time of reception of
the two signals; the sound may be transmitted through air or
water and from the same location as the radio signal or a location
remote from it. { 'dis'tâns,fînd-îŋ ,stâ'shôn }

distance-luminosity relation [ASTRON] The relation in
which the light intensity from a star is inversely proportional to
the square of its distance. { ,dis'tâns lü-mô'nâs-əd-ē'ri'lâ'shôn }

distance mark [ELECTR] A movable point produced on a
radar display by a special signal generator, so that when the
mark is moved to a target position on the screen the range to the
target can be read on the calibrated dial of the signal generator;
usually used for gun laying where highly accurate distance is
important. { 'dis'tâns ,märk }

distance marker [ENG] One of a series of concentric circles,
painted or otherwise fixed on the screen of a plan position in-
dicator, from which the distance of a target from the radar
antenna can be read directly; used for surveillance and naviga-
tion where the relative distances between a number of targets
are required simultaneously. Also known as radar range
marker; range marker. { 'dis'tâns ,märk-ər }

distance marking light [NAV] An approach light indicating
distance from the end of a runway, landing strip, or channel.
{ 'dis'tâns ,märk-îŋ ,lît }

distance-measuring equipment [NAV] A radio aid to nav-
igation that provides distance information by measuring total
round-trip time of transmission from an airborne interrogator to
a ground-based transponder and return. Abbreviated DME.
{ 'dis'tâns ,mez'h-er-îŋ i'kwîp'mânt }

distance modulus See modulus of distance. { 'dis'tâns ,mäj-
ə'lôs }

distance protection [ELEC] Effect of a device operative
within a predetermined electrical distance on the protected cir-
cuit to cause and maintain an interruption of power in a faulty
circuit. { 'dis'tâns prô'tek'shôn }

distance ratio [MECH ENG] The ratio of the distance moved
by the effort or input of a machine in a specified time to the
distance moved by the load or output. { 'dis'tâns ,râ-shô }

distance reception [COMMUN] Reception of messages from,
or communication with, distant radio stations. Abbreviated DX.
{ 'dis'tâns ri'sep'shôn }

distance relay [ELEC] Protective relay, the operation of
which is a function of the distance between the relay and the
point of fault. { 'dis'tâns ,rē,lâ }

distance resolution [ENG] The minimum radial distance by
which targets must be separated to be separately distinguishable
by a particular radar. Also known as range discrimination;
range resolution. { 'dis'tâns ,rez-ô,lü'shôn }

distance/velocity lag [CONT SYS] The delay caused by the
amount of time required to transport material or propagate a
signal or condition from one point to another. Also known as
transportation lag; transport lag. { 'dis'tâns vâ'lâs-əd-ē ,lag }

distant early-warning line [ORD] Defense line of radar sta-
tions at about the 70th parallel on the North American continent.
{ 'dis'tânt ,ər-lē 'wôrn-îŋ ,lîn }

distant field [ELECTROMAG] The electromagnetic field at a
distance of five wavelengths or more from a transmitter, where
the radial electric field becomes negligible. { 'dis'tânt ,fîld }

distant signal [CIV ENG] A signal placed at a distance from

a block of track to give advance warning when the block is
closed. { 'dis'tânt 'sig-nəl }

distemper [VET MED] Any of several contagious virus dis-
eases of mammals, especially the form occurring in dogs,
marked by fever, respiratory inflammation, and destruction of
myelinated nerve tissue. { dis'tem-pər }

disthene See kyanite. { 'dis,thēn }

distichous [BIOL] Occurring in two vertical rows. { 'dis'tâ-
kəs }

distillate [CHEM] The products of distillation formed by con-
densing vapors. { 'dis'tô,lât }

distillate fuel [MATER] Any one of the wide variety of fuels
obtained from fractions boiling above the temperature at which
gasoline comes off in the distillation of petroleum. { 'dis'tô,lât
,fyûl }

distillate fuel oil [MATER] A classification for one of the
overhead fractions produced from crude oil in conventional
distillation operations. { 'dis'tô,lât 'fyûl ,ôil }

distillation [CHEM] The process of producing a gas or vapor
from a liquid by heating the liquid in a vessel and collecting and
condensing the vapors into liquids. { ,dis'tô'lâ'shôn }

distillation column [CHEM] A still for fractional distillation.
{ ,dis'tô'lâ'shôn ,kâl-əm }

distillation curve [CHEM] The graphical plot of temperature
versus overhead product (distillate) volume or weight for a dis-
tillation operation. { ,dis'tô'lâ'shôn ,kərv }

distillation loss [CHEM] In a laboratory distillation, the dif-
ference between the volume of liquid introduced into the dis-
tilling flask and the sum of the residue and condensate received.
{ ,dis'tô'lâ'shôn ,lôs }

distillation range [CHEM] The difference between the tem-
perature at the initial boiling point and at the end point of a
distillation test. { ,dis'tô'lâ'shôn ,rânj }

distillation test [CHEM ENG] A standardized procedure for
finding the initial, intermediate, and final boiling points in the
boiling range of petroleum products. { ,dis'tô'lâ'shôn ,test }

distilled liquor [FOOD ENG] Alcoholic beverages obtained by
distilling an alcohol-containing liquid such as wine or fermented
fruit juice and then further treating the distillate to obtain a
beverage of specific character. Also known as hard liquor.
{ dâ'stîld 'lik-ər }

distilled mustard gas [ORG CHEM] A delayed-action casualty
gas (mustard gas) that has been distilled, or purified, to greatly
reduce the odor and thereby increase its difficulty of detection.
{ dâ'stîld 'mäs'tôrd ,gas }

distilled water [CHEM] Water that has been freed of dissolved
or suspended solids and organisms by distillation. { dâ'stîld
'wôd-ər }

distillery [FOOD ENG] The building where distillation of al-
coholic beverages occurs. { dâ'stîl-ər-ē }

distilling flask [CHEM] A round-bottomed glass flask that is
capable of holding a liquid to be distilled. { dâ'stîl-îŋ ,flask }

distoclusion [MED] Malocclusion of the teeth in which those
of the lower jaw are in distal relation to the upper teeth. { 'dis-
tô'klü-zhôn }

distome [INV ZOO] A digenetic trematode characterized by
possession of an oral and a ventral sucker. { ,dî'stôm }

distorted water [METEOROL] A multimolecular layer of wa-
ter, at the boundary between a mass of liquid water and the
surrounding vapor, whose structure is not identical with that of
bulk water. { di'stôrd-əd 'wôd-ər }

distortion [ELECTR] Any undesired change in the waveform
of an electric signal passing through a circuit or other transmis-
sion medium. [ENG] In general, the extent to which a system
fails to accurately reproduce the characteristics of an input signal
at its output. [ENG ACOUS] Any undesired change in the wave-
form of a sound wave. [OPTICS] A type of aberration in which
there is variation in magnification with the distance from the
axis of an optical system, so that images are not geometrically
similar to their objects. { di'stôr'shôn }

distortion factor [COMMUN] Ratio of the effective value of
the residue of a wave after elimination of the fundamental to the
effective value of the original wave. { di'stôr'shôn ,fak-tər }

distortion meter [ENG] An instrument that provides a visual
indication of the harmonic content of an audio-frequency wave.
{ di'stôr'shôn ,mêd-ər }

distrail See dissipation trail. { 'dis,trâil }

distress frequency [COMMUN] A frequency allotted to dis-

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so that

$$\cos \theta = \frac{A}{\pm \sqrt{A^2 + B^2}}, \quad \sin \theta = \frac{B}{\pm \sqrt{A^2 + B^2}}$$

and

$$p = \frac{|C|}{\sqrt{A^2 + B^2}}.$$

Distance from a Point to a Line

The perpendicular distance from a point $P(x_1, y_1)$ to the line $Ax + By + C = 0$ is given by d

$$d = \frac{Ax_1 + By_1 + C}{\pm \sqrt{A^2 + B^2}}.$$

Circle

The general equation of a circle of radius r and center at $P(x_1, y_1)$ is

$$(x - x_1)^2 + (y - y_1)^2 = r^2.$$

Parabola

A parabola is the set of all points (x, y) in the plane that are equidistant from a given line called the *directrix* and a given point called the *focus*. The parabola is symmetric about a line that contains the focus and is perpendicular to the directrix. The line of symmetry intersects the parabola at its *vertex* (Figure 17). The eccentricity $e = 1$.

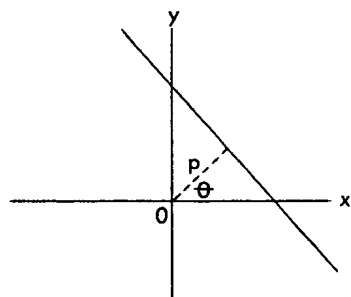


FIGURE 16 Construction for normal form of straight line equation.

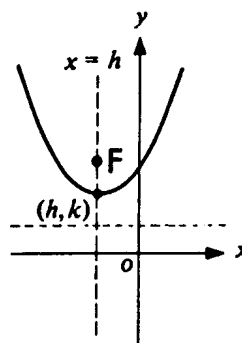


FIGURE 17 Parabola with vertex at (h, k) . F identifies the focus.

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SIDE

distaff \ˈdɪstɒf/ *adj* : of or relating to a woman : FEMALE <cooking, sewing, and such ~ matters> <~ applicants must be high-school graduates—*Springfield (Mass.) Daily News*> <a golf swing that is the ~ counterpart of the male champion's> <the entries in the golf tournament were largely on the ~ side>; *esp* : consisting of, derived from, or related to the mother or female line <the ~ side of the family> <the ~ branch of a family> — compare SPEAR

distaff 1a

dis-taff-er \dɪstəf(r)/ *n* -s *slang* : WOMAN

dis-tain \dɪˈstɑːn/ *vt* -ED/-ING/-S [ME *disteynen*, fr. MF *desteindre* to take away the color of, fr. OF, fr. *des-* 'dis- + *teindre* to dye, color, fr. L *tingere* to wet, dye — more at TINGE] **1** *archaic* : to tinge with a color different from the natural and proper one : STAIN, DISCOLOR **2** *archaic* : DEFILE, DISHONOR, SULLY

dis-tal \ˈdɪstəl/ *adj* [*dist-* + *-al*] **1** : remote from the point of attachment or origin, from a point conceived of as central, or from the point of view: as **a** : located away from the center of the body <the ~ end of a bone> — opposed to *proximal* **b** : located away from the mesial plane of the body — opposed to *mesial* **2** : physical or social rather than sensory — opposed to *proximal*

distal convoluted tubule *n* : the convoluted portion of the vertebrate nephron that lies between the loop of Henle and the collecting tubule in intimate association with the afferent vessel, that resembles the proximal convoluted tubule in structure though lacking the striated border, and that is concerned esp. with concentration of the urine

dis-tale \dɪˈsta(,)lə, -ā(,)lə, -ä(,)lə/ *n, pl* **distal-ia** \-lɛə/ [NL, fr. *dist-* + L *-ale* (neut. of *-alis* -al)] : any of the distal row of carpal or tarsal bones

dis-tal-ly \ˈdɪstələ/ *adv* : toward or near a distal part or end

dis-tance \ˈdɪstən(t)s/ *n* -s [ME *distauce*, fr. OF *destance*, *distance*, fr. L *distantia*, fr. *distant*, *distans* (pres. part. of *distare* to stand apart, be distant) + *-ia* -y — more at DISTANT]

1 *obs* : DISCORD, DISSENSION, QUARREL **2** **a** (1) : a portion of time between two events or between an event and the present : INTERVAL <the ~ between birth and death> <not sure he could endure the ~ to the time of his release from captivity> (2) : separation in time <it is impossible to judge, at this ~, whether most of these cases would pass for willful

murder at the present day — G.G.Coulton> **b** : the degree or amount of separation between two points, lines, surfaces, or objects in geometrical space measured along the shortest path joining them <the ~ between the two houses was exactly

one mile> <the ~ between the eyes varies with individuals>:

(1) : the space between troops in ranks, vehicles, or units measured from front to rear — contrasted with *interval*

(2) : the space between the foremasts of adjacent ships in column, line, or line of bearing (3) : the amount of space between the eye and an object of perception **c** : an extent

of space measured linearly along a route : the length esp. of a surface or road traveled or to be traveled <the Gambia river, navigable for ocean vessels for a ~ of 150 miles

—*Americana Annual*> <he did not know the ~ he had walked> <whoever guided the Stevens Party in 1844 would have kept as close as possible to the point of this hill in order

to save ~ — G.R.Stewart> <a considerable ~ of highway> <followed for a ~ by a stray dog> **d** : an extent or degree of

figurative advance or movement away or along from a point considered primary or original <they carried Puritan severity quite a ~ — John Gould> <the firm is now quite a ~ from what it was when it was founded> **e** : a portion (as of landscape) extended in breadth and depth esp. viewable all at

once : EXPANSE <a ~ of field, woods, and diluted November sky did indeed stretch without any other feature — Elizabeth

Rowen> <a country of flat plains and great ~> **f** : in racing